

[0030] Figs. 6A to 6C are sectional views illustrating exemplary embodiments of a metal protrusions formed on a first electrode according to a flat type fluorescent lamp of the present invention.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0031] Reference will now be made in detail to the preferred embodiments of the present invention, examples of which are illustrated in the accompanying drawings.

[0032] Fig. 3 is a plane view of a flat type fluorescent lamp according to the present invention, and Fig. 4 is a sectional view taken along line I-I' of Fig. 3.

[0033] As shown in Figs. 3 and 4, the flat type fluorescent lamp according to the present invention includes a first electrode 33 comprised of a first metal layer 33a and a plurality of metal protrusions 33b formed on a first substrate 31. A barrier layer 43 covers the first metal layer 33a and the plurality of metal protrusions 33b. A second substrate 35 has a surface facing the first substrate 31 covered with a phosphor layer 37. A second electrode 39 having a matrix shape is on the phosphor layer 37. Supports 41 are selectively formed between the first substrate 31 and the second substrate 35.

[0034] The first metal layer 33a is formed on the entire surface of the first substrate 31 and the metal protrusions 33b are selectively formed on the first metal layer 33a. The metal protrusions 33b are formed on portions of the first metal layer 33a that corresponds to areas of the second electrode 39 matrix that are directly over the first metal layer 33a.

[0035] In the one embodiment of the present invention, the metal protrusions 33b are formed in a trigonal pyramid shape, as shown in Fig. 6A. However, the metal protrusions 33b may have

the second substrate, second electrodes formed on the phosphor layer, and supports selectively formed between the first substrate and the second substrate.

[0022] In another aspect, a method for manufacturing a flat type fluorescent lamp according to the present invention includes the steps of forming a first electrode with protrusions at different intervals on a first substrate, forming a barrier layer over an entire surface of the first substrate including the first electrode, forming a phosphor layer on a second substrate, forming a second electrode on the phosphor layer, selectively forming supports between the first substrate and the second substrate and bonding the first substrate to the second substrate.

[0023] It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory and are intended to provide further explanation of the invention as claimed.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0024] The invention will be described in detail with reference to the following drawings in which like reference numerals refer to like elements wherein:

[0025] Fig. 1 is a sectional view of a related art back light;

[0026] Fig. 2 is an exploded perspective view of a related art back light;

[0027] Fig. 3 is a plan view of a flat type fluorescent lamp according to the present invention;

[0028] Fig. 4 is a sectional view taken along line I-I' of Fig. 3;

[0029] Figs. 5A to 5E are sectional views illustrating process steps of manufacturing a flat type fluorescent lamp according to the present invention; and